WHAT IS CLAIMED IS:

1.   An image processing system in which first and second image processing apparatuses are connected via a serial bus,

5   wherein said first image processing apparatus comprises control means for controlling distribution of image processing between said two apparatuses on the basis of performance of said first image processing apparatus and performance of said second image

10   processing apparatus.

2.   The system according to claim 1, wherein said first and second image processing apparatuses can commonly execute a plurality of image processes, and

15   said control means distributes the plurality of image processes to said first and second image processing apparatuses.

3.   The system according to clam 2, wherein when said first image processing apparatus has higher performance,

20   said control means distributes many image processes to said first image processing apparatus.

4.   The system according to claim 3, wherein said control means acquires apparatus information of said second image processing apparatus via said serial bus,

25   and controls distribution of image processing in said first and second image processing apparatuses on the

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basis of the apparatus information.

5.   The system according to claim 4, wherein the apparatus information contains performance information of said second image processing apparatus.

5   6.   The system according to claim 5, wherein said control means calculates a time required for each image process in each of said first and second image processing apparatuses, and controls distribution of image processing in said first and second image

10 processing apparatuses so as to minimize a total processing time of the image processes.

7.   The system according to claim 1, wherein

said second image processing apparatus also comprises control means for controlling distribution of

15 image processing, similar to said first image processing apparatus, and

said control means of said first and second image processing apparatuses determine which of said control means controls distribution of image processing.

20 8.   The system according to claim 7, wherein each control means determines that an apparatus exhibiting higher performance controls distribution of image processing.

9.   The system according to claim 1, wherein

25   said first image processing apparatus is an image input apparatus for inputting image data, and

said second image processing apparatus is an
image output apparatus for outputting the image data
transferred from said image input apparatus via said
serial bus.

5   10.   The system according to claim 1, wherein
said second image processing apparatus is an
image input apparatus for inputting image data, and
said first image processing apparatus is an image
output apparatus for outputting the image data
10   transferred from said image input apparatus via said
serial bus.

11.   The system according to claim 1, wherein the
image data is isochronously transferred.

12.   The system according to claim 1; wherein said
15   serial bus is a bus compatible or complying with the
IEEE 1394 standard.

13.   The system according to claim 1, wherein said
serial bus is a bus compatible or complying with the
USB standard.

20   14.   An image processing apparatus connected to
another image processing apparatus via a serial bus,
comprising:
detection means for detecting performance of said
another image processing apparatus;
25   determination means for determining optimal
distribution of image processing between said apparatus

and said another image processing apparatus on the basis of a detection result; and

image processing means for performing image processing on the basis of a determination result.

5   15.   An image processing apparatus connected to another image processing apparatus via a serial bus, comprising:

notification means for notifying said another image processing apparatus of performance of said

10   apparatus;

reception means for receiving distribution of image processing determined in said another image processing apparatus; and

image processing means for performing image

15   processing on the basis of the received distribution of image processing.

16.   A control method of an image processing system in which first and second image processing apparatuses are connected via a serial bus, comprising the step of:

20   in the first image processing apparatus, controlling distribution of image processing between the two apparatuses on the basis of performance of the first image processing apparatus and performance of the second image processing apparatus.

25   17.   A recording medium which records a control program of an image processing system in which first

and second image processing apparatuses are connected via a serial bus, wherein the program comprises at least:

a code of controlling, in the first image
5 processing apparatus, distribution of image processing between the two apparatuses on the basis of performance of the first image processing apparatus and performance of the second image processing apparatus.

18. An image processing system in which first and
10 second image processing apparatuses are connected via a serial bus,

wherein said first and second image processing apparatuses respectively comprise first and second control means for controlling distribution of image
15 processing between said two apparatuses, and determine which of said first and second control means acquires control.

19. The system according to claim 18, wherein the control is determined to be given to an apparatus
20 exhibiting higher performance.

20. The system according to claim 18, wherein

said first and second image processing apparatuses can commonly execute a plurality of image processes, and

25 said first and second control means distribute the plurality of image processes to said first and

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second image processing apparatuses.

21. The system according to clam 20, wherein when said first image processing apparatus has higher performance, said first and second control means

5 distribute many image processes to said first image processing apparatus.

22. The system according to claim 21, wherein said first and second control means acquire pieces of apparatus information of partner apparatuses via said

10 serial bus, and control distribution of image processing in said first and second image processing apparatuses on the basis of the pieces of apparatus information.

23. - The system according to claim 22, wherein the

15 pieces of apparatus information contain pieces of performance information of the partner apparatuses.

24. The system according to claim 23, wherein said first and second control means calculate a time required for each image process in each of said first

20 and second image processing apparatuses, and control distribution of image processing in said first and second image processing apparatuses so as to minimize a total processing time of the image processes.

25. The system according to claim 18, wherein

25 connection IDs are uniquely determined every time said first and second image processing apparatuses are

connected to the system, and

which of said first and second control means
acquires the control is determined based on the
connection IDs.

5   26.   The system according to claim 18, wherein
said first image processing apparatus is an image
input apparatus for inputting image data, and

said second image processing apparatus is an
image output apparatus for outputting the image data
10   transferred from said image input apparatus via said
serial bus.

27.   The system according to claim 26, wherein the
image data is isochronously transferred.

28.   An image processing system in which first and
15   second image processing apparatuses are connected via a
serial bus, wherein

image data processed in said first image
processing apparatus is stored in storage means under
management of said serial bus, and

20   said second image processing apparatus selects
either of the image data stored in said storage means
and image data processed by said second image
processing apparatus.

29.   The system according to claim 28, wherein said
25   storage means is incorporated in said first image
processing apparatus.

30. The system according to claim 28, wherein said storage means is incorporated in said second image processing apparatus.

31. The system according to claim 28, wherein said serial bus is a bus compatible or complying with the IEEE 1394 standard.

32. The system according to claim 28, wherein said serial bus is a bus compatible or complying with the USB standard.

33. An image processing apparatus connected to another image processing apparatus via a serial bus, comprising:

control means for controlling distribution of image processing between said apparatus and said another image processing apparatus; and

determination means for determining whether distribution of image processing is controlled by said control means or said another image processing apparatus.

34. A control method of an image processing system in which first and second image processing apparatuses are connected via a serial bus, wherein

the first and second image processing apparatuses respectively comprise first and second control means for controlling distribution of image processing between the two apparatuses, and determine which of the

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first and second control means acquires control.

35.　A control method of an image processing system in which first and second image processing apparatuses are connected via a serial bus, wherein

5　　　　image data processed in the first image processing apparatus is stored in storage means under management of said serial bus, and

　　　　the second image processing apparatus selects either of the image data stored in the storage means

10　and image data processed by the second image processing apparatus.

36.　A recording medium which records a control program of an image processing system in which first and second image processing apparatuses having first

15　and second control means for controlling distribution of image processing between the apparatuses are connected via a serial bus, wherein the program comprises at least:

　　　　a code of determining which of the first and

20　second control means acquires control.

37.　A recording medium which records a control program of an image processing system in which first and second image processing apparatuses are connected via a serial bus, wherein the program comprises at

25　least:

　　　　a code of storing image data processed in the

first image processing apparatus in storage means under

management of said serial bus, and

a code of causing the second image processing

apparatus to select either of the image data stored in

5   the storage means and image data processed by the

second image processing apparatus.

38.   An image processing system in which an image

input apparatus and an image output apparatus are

connected via a serial bus, wherein

10   said image input apparatus comprises:

input means for inputting image data of a first

format;

determination means for determining whether to

convert the image data of the first format into a

15   second format;

first conversion means for converting the image

data of the first format into the second format on the

basis of a determination result; and

first communication means for transmitting the

20   image data of the first or second format to said image

output apparatus, and

said image output apparatus comprises:

second communication means for receiving the

image data transferred from said image input apparatus;

25   holding means for temporarily holding the

received image data in a buffer having a predetermined

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capacity;

second conversion means for, if the image data held in the buffer has the first format, converting the image data into the second format; and

5   output means for sequentially outputting the image data of the second format.

39.   The system according to claim 38, wherein the first format is a compressed data format, and the second format is a data format obtained by

10   decompressing image data of the first format.

40.   The system according to claim 39, wherein the first format is a JPEG format.

41.   The system according to claim 38, wherein said determination means in said image input apparatus

15   determines whether to convert a format of the image data on the basis of an empty state of the buffer in said image output apparatus.

42.   The system according to claim 41, wherein said determination means determines to convert the format of

20   the image data when the buffer is full.

43.   The system according to claim 42, wherein said determination means determines to convert the format of the image data when said serial bus is detected to be busy in said first communication means.

25   44.   The system according to claim 42, wherein said second communication means notifies said

image input apparatus of buffer information

representing the empty state of the buffer, and

said determination means determines whether to

convert the format of the image data on the basis of

5   the buffer information.

45.   The system according to claim 44, wherein

said second communication means issues an image

data format conversion request to said image input

apparatus on the basis of the empty state of the buffer,

10   and

when the format conversion request is received,

said determination means determines to convert the

format of the image data.

46.   The system according to claim 45, wherein said

15   second communication means issues the format conversion

request when the buffer is full.

47.   The system according to claim 38, wherein

said determination means determines in units of

predetermined blocks whether to convert a format of the

20   image data, and

each of said conversion means converts the image

data of the first format into the second format for all

blocks after a block said determination means

determines to convert.

25   48.   The system according to claim 38, wherein

said determination means determines in units of

predetermined blocks whether to convert a format of the image data, and

each of said conversion means converts the image data of the first format into the second format for only a block said determination means determines to convert.

49. The system according to claim 47, wherein said determination means determines not to convert the format of the image data for a first block in the image data.

50. The system according to claim 47, wherein said image input apparatus further comprises:

decision means for comparing performance of said first conversion means with performance of said second conversion means for a first block in the image data, and deciding to perform conversion processing by conversion means exhibiting higher performance.

51. The system according to claim 38, wherein said serial bus is a bus compatible or complying with the IEEE 1394 standard.

52. The system according to claim 38, wherein said serial bus is a bus compatible or complying with the USB standard.

53. An image processing apparatus connected to another image processing apparatus via a serial bus, comprising:

input means for inputting image data of a first
format;

determination means for determining whether to
convert the image data of the first format into a
5   second format;

conversion means for converting the image data of
the first format into the second format on the basis of
a determination result; and

communication means for transmitting the image
10 data of the first or second format to said another
image processing apparatus.

54.   An image processing apparatus connected to
another image processing apparatus via a serial bus,
comprising:

15   communication means for receiving image data
transferred from said another image processing
apparatus;

holding means for temporarily holding the
received image data in a buffer having a predetermined
20 capacity;

conversion means for, if the image data held in
the buffer has the first format, converting the image
data into the second format; and

output means for sequentially outputting the
25 image data of the second format.

55.   A control method of an image processing system in

which an image input apparatus and an image output apparatus are connected via a serial bus, comprising:

in the image input apparatus,

the input step of inputting image data of a first format;

the determination step of determining whether to convert the image data of the first format into a second format;

the first conversion step of converting the image data of the first format into the second format on the basis of a determination result; and

the transmission step of transmitting the image data of the first or second format to the image output apparatus, and

in the image output apparatus,

the reception step of receiving the image data transferred from the image input apparatus;

the holding step of temporarily holding the received image data in a buffer having a predetermined capacity;

the second conversion step of, if the image data held in the buffer has the first format, converting the image data into the second format; and

the output step of sequentially outputting the image data of the second format.

56. The method according to claim 55, wherein the

first format is a compressed data format, and the second format is a data format obtained by decompressing image data of the first format.

57.   The method according to claim 55, wherein the determination step comprises the step of determining whether to convert a format of the image data on the basis of an empty state of the buffer in the image output apparatus.

58.   A recording medium which records a control program of an image processing system in which an image input apparatus and an image output apparatus are connected via a serial bus, wherein the control program comprises at least:

in the image input apparatus,

a code of the input step of inputting image data of a first format;

a code of the determination step of determining whether to convert the image data of the first format into a second format;

a code of the first conversion step of converting the image data of the first format into the second format on the basis of a determination result; and

a code of the transmission step of transmitting the image data of the first or second format to the image output apparatus, and

in the image output apparatus,

a code of the reception step of receiving the image data transferred from the image input apparatus;

a code of the holding step of temporarily holding the received image data in a buffer having a

5   predetermined capacity;

a code of the second conversion step of, if the image data held in the buffer has the first format, converting the image data into the second format; and

a code of the output step of sequentially

10   outputting the image data of the second format.